

Listing of Claims

The following listing of claims replaces any pending claims. Inserted text is shown as underlined ("____") and deleted text is shown as stricken ("—").

1 – 30. Canceled.

31. (New) A method for processing a TiN layer on a substrate, comprising:

providing a substrate;

depositing a TiN layer with a halogen containing titanium source gas and a nitrogen source gas on said substrate in a first process chamber; and

subjecting the TiN layer to a plasma treatment involving a reactive gas consisting essentially of pure nitrogen.

32. (New) The method as claimed in claim 31 wherein said nitrogen source gas is NH_3 .

33. (New). The method as claimed in claim 31 wherein said halogen containing titanium source gas is TiCl_4 .

34. (New) The method as claimed in claim 31 wherein said deposition is a chemical vapor deposition.

35. (New) The method as claimed in claim 31 wherein said plasma treatment is performed ex-situ in a second process chamber.

36. (New) The method as claimed in claim 31, wherein said plasma treatment comprises a nitrogen gas flow rate of 500 to 2000sccm, a chamber temperature between about 500° and 700°, a RF power from about 400 Watts to 1000 Watts, a chamber pressure of about 1 to 10 Torr, and a process time of at least 30 seconds.

37. (New) The method as claimed in claim 31 further comprised of depositing a metal layer on the TiN layer after the plasma treatment and planarizing to form a contact.